

LYUTAYA, M.D.; SAMSONOV, G.V.

Preparation and properties of lanthanum nitride. Ukr.khim.zhur. 29:
251-255 '63. (MIRA 16:4)

1. Institut metallokeramiki i spetsial'nykh splavov AN UkrSSR.
(Lanthanum compounds) (Nitrides)

SAMSONOV, G.V.; LYUTAYA, M.D.; NESHPOR, V.S.

Preparation and physicochemical properties of scandium
nitride. Zhur. prikl. khim. 36 no.10:2108-2115 O '63.

(MIRA 17:1)

1. Institut metallokeramiki i spetsial'nykh splavov AN UkrSSR.

5(2)

AUTHORS:

Tananayev, I. V., Lyutaya, M. D.

SOV/78-4-1-20/48

TITLE:

I. On the Mixed Hexanitronickelates of Lanthanum and Potassium (I. O smeshannykh geksanitronikeleatakh lantana i kaliya)

PERIODICAL:

Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 1, pp 97-102 (USSR)

ABSTRACT:

Solubility in the system $\text{La}(\text{NO}_3)_3\text{-K}_4[\text{Ni}(\text{NO}_2)_6]\text{-H}_2\text{O}$ was investigated at 25° . The solid phases separated out were analyzed and the thermograms of these compounds drawn. The solubility curves indicate the gradual formation of three solid phases with a rise of $\text{K}_4[\text{Ni}(\text{NO}_2)_6]$ content. The following solid phases are formed: $\text{K}_6\text{La}_2[\text{Ni}(\text{NO}_2)_6]_3$; $\text{K}_{21}\text{La}_5[\text{Ni}(\text{NO}_2)_6]_9\cdot\text{H}_2\text{O}$; $\text{K}_5\text{La}[\text{Ni}(\text{NO}_2)_6]_2\cdot\text{H}_2\text{O}$. The individuality of these compounds was proved by their thermograms. The thermograms of $\text{K}_6\text{La}_2[\text{Ni}(\text{NO}_2)_6]_3$ show an endothermic effect within the temperature range $220\text{-}265^\circ$. Thereby the color of the salts changes from brown to black. The thermograms of

Card 1/3

SOV/78-4-1-20,48

I. On the Mixed Hexanitritonickelates of Lanthanum and Potassium

$K_{21}La_5[Ni(NO_2)_6]_9 \cdot H_2O$ show two endothermic effects. The first effect at 130° indicates the dehydration of the salt. The second one at $230-270^\circ$ indicates the decomposition of the salt. The thermogram of $K_5La[Ni(NO_2)_6]_2 \cdot H_2O$ shows an endothermic effect at 130° indicating the dehydration of the salt and an endothermic effect at $230-250^\circ$ indicating the decomposition of the salt. The solubility of $K_5La[Ni(NO_2)_6]_2 \cdot H_2O$

in KNO_2 solutions (1-7 mol/l) was investigated. It was found that at the same time salting out takes place whereby the solid initial phase is changed to $K_6La_2[Ni(NO_2)_6]_3$. Rare earths can be separated by KNO_2 solutions by fractional crystallization of their mixed hexanitritonickelates. There are 6 figures, 4 tables, and 2 references.

Card 2/3

5(2)

AUTHORS: Tananayev, I. V., Lyutaya, M. D.

SOV/78-4-1-21/48

TITLE: II. On Mixed Hexanitritonickelates of Praseodymium and Neodymium (II. O smeshannykh geksanitronikeleatakh prazeodima i neodima)

PERIODICAL: Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 1, pp 103-109 (USSR)

ABSTRACT: Solubility in the systems $\text{Pr}(\text{NO}_3)_3\text{-K}_4[\text{Ni}(\text{NO}_2)_6]\text{-H}_2\text{O}$ and $\text{Nd}(\text{NO}_3)_3\text{-K}_4[\text{Ni}(\text{NO}_2)_6]\text{-H}_2\text{O}$ was investigated at 25°C. In the first system the phases $\text{K}_{21}\text{Pr}_5[\text{Ni}(\text{NO}_2)_6]_9\text{-H}_2\text{O}$ and $\text{K}_5\text{Pr}[\text{Ni}(\text{NO}_2)_6]_2\text{-H}_2\text{O}$ are gradually formed. The second system also shows the gradual formation of two solid phases: $\text{K}_{21}\text{Nd}_5[\text{Ni}(\text{NO}_2)_6]_9\text{-H}_2\text{O}$ and $\text{K}_5\text{Nd}[\text{Ni}(\text{NO}_2)_6]_2\text{-H}_2\text{O}$. The thermograms were drawn and are shown in the figures 3, 4, and 8, 9. The solubility of $\text{K}_5\text{Pr}[\text{Ni}(\text{NO}_2)_6]_2\text{-H}_2\text{O}$ and $\text{K}_5\text{Nd}[\text{Ni}(\text{NO}_2)_6]_2\text{-H}_2\text{O}$ in KNO_3 solutions (1-7 mol/l) was investigated. It was found that

Card 1/2

SOV/78-4-1-21/48

II. On Mixed Hexanitritonickelates of Praseodymium and Neodymium

the solid phases thereby change to $K_{21}Pr_5[Ni(NO_2)_6]_9 \cdot H_2O$ and $K_{21}Nd_5[Ni(NO_2)_6]_9 \cdot H_2O$. There are 10 figures, 8 tables, and 1 Soviet reference.

SUBMITTED: August 2, 1958

Card 2/2

5(2)

SOV/78-4-2-31/40

AUTHORS: Tananayev, I. V., Lyutaya, M. D.

TITLE: On the Hexanitrito Nickelates of Samarium, Yttrium, and Ytterbium (O geksanitronikeleatakh samariya, ittriya i itterbiya)

PERIODICAL: Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 2, pp 457-464 (USSR)

ABSTRACT: The following systems were investigated: $\text{Sm}(\text{NO}_3)_3 \cdot \text{K}_4[\text{Ni}(\text{NO}_2)_6] \cdot \text{H}_2\text{O}$, $\text{Y}(\text{NO}_3)_3 \cdot \text{K}_4[\text{Ni}(\text{NO}_2)_6] \cdot \text{H}_2\text{O}$, and $\text{Yb}(\text{NO}_3)_3 \cdot \text{K}_4[\text{Ni}(\text{NO}_2)_6] \cdot \text{H}_2\text{O}$. Two solid phases are formed in the first system: $\text{K}_5\text{Sm}[\text{Ni}(\text{NO}_2)_6]_2$ and $\text{K}_{19}\text{Sm}_3[\text{Ni}(\text{NO}_2)_6]_7 \cdot 4\text{H}_2\text{O}$. The solubility curves suggest the gradual formation of the two phases. The thermograms of the solid phases were plotted and are shown in figures 3 and 4. The thermogram of $\text{K}_5\text{Sm}[\text{Ni}(\text{NO}_2)_6]_2$ shows one endothermal effect only in the temperature range of $225-250^\circ$. The thermogram of $\text{K}_{19}\text{Sm}_3[\text{Ni}(\text{NO}_2)_6]_7 \cdot 4\text{H}_2\text{O}$ shows two endothermal effects, the first one at 125° and the second one in the temperature range of $230-265^\circ\text{C}$. The compound

Card 1/3

SOV/78-4-2-31/40

On the Hexanitrito Nickelates of Samarium, Yttrium, and Ytterbium

$K_{19}Sm_3[Ni(NO_2)_6]_7 \cdot 4H_2O$ dissolves more easily in KNO_2 solutions than the respective hexanitrito nickelates of lanthanum, praseodymium, and neodymium. The compound $K_{19}Y_3[Ni(NO_2)_6]_7 \cdot 4H_2O$ is formed in the system $Y(NO_3)_3-K_4[Ni(NO_2)_6] \cdot H_2O$. The thermogram of this compound shows two endothermal effects, the first one at 120° and the second one at $200^\circ-250^\circ$. The solubility of $K_{19}Y_3[Ni(NO_2)_6]_7 \cdot 4H_2O$ in KNO_2 solutions is greater than that of the mixed hexanitrito nickelates of lanthanum, praseodymium, neodymium, and samarium. The hexanitrito nickelate of yttrium is soluble in a 4.6 molar solution of KNO_2 , whereas the hexanitrito nickelates of praseodymium, neodymium, lanthanum, and samarium are insoluble in this solutions. The phase $K_{19}Yb_3[Ni(NO_2)_6]_7$ is formed in the system $Yb(NO_3)_3-K_4[Ni(NO_2)_6] \cdot H_2O$. The thermographic investigations show an endothermal effect in the temperature range of $190-230^\circ$. The thermographic investigations of KNO_2 and

Card 2/3

SOV/78-4-2-31/40

On the Hexanitrito Nickelates of Samarium, Yttrium, and Ytterbium

$K_4[Ni(NO_2)_6]$ were carried out and are shown in figures 9 and 10. The results show that the thermograms of KNO_2 and $K_4[Ni(NO_2)_6]$ differ distinctly from all thermograms of the mixed hexanitrito nickelates of rare earths. There are 10 figures, 9 tables, and 3 references, 2 of which are Soviet.

SUBMITTED: September 15, 1958

Card 3/3

ACCESSION NR: AT4035158

S/0000/63/000/000/0008/0021

AUTHOR: Samsonov, G. V.; Kosolapova, T. Ya.; Lyutaya, M. D.; Makarenko, G. N.

TITLE: Preparation and physicochemical properties of the carbides and nitrides of the rare-earth elements

SOURCE: AN SSSR. Institut geokhimii i analiticheskoy khimii. Redkozemel'nyye elementy* (Rare-earth elements). Moscow, Izd-vo AN SSSR, 1963, 8-21

TOPIC TAGS: rare earth, rare earth element, scandium, lanthanum, yttrium, cerium, carbide, nitride

ABSTRACT: After reviewing the literature on the structure and physical properties (density, melting point, electrical resistivity) of the carbides and nitrides of Sc, Y, La and Ce, the authors describe the preparation of ScC, YC, LaC, ScN, CeN and LaN, the oxidation of the carbides, and some results of an X-ray study of their microstructure. The carbides and nitrides were prepared by heating the oxides with C and N, respectively, at temperatures between 800 and 1800C. The nitrides could also be prepared at lower temperatures by heating the oxide with ammonia. Data are given on the effects of variations in temperature, heating rate and concentration of the reagents, as well as on the relationship between the composition and physical properties of the carbides. Thus, YC₂ was found to have the highest

ACCESSION NR: AT4035158

melting point, electrical resistivity, chemical stability and microhardness, all of which increased with the C/metal ratio. X-ray analysis of the nitrides showed a cubic lattice of the NaCl type with a period of about 4.5-5.5 Å. "The X-ray analyses were carried out by O. T. Khorpyakov." Orig. art. has: 12 figures and 6 tables.

ASSOCIATION: Institut geokhimii i analiticheskoy khimii AN SSSR (Institute of Geochemistry and Analytical Chemistry, AN SSSR)

SUBMITTED: 31Oct63

DATE ACQ: 30Apr64

ENCL: 00

SUB CODE: IC

NO REF SOV: 016

OTHER: 005

Card 2/2

ACCESSION NO: A1404127

AUTHOR: Lyutaya, M. D.; Samsonov, G. V.

TITLE: Nitrides of rare dispersed and rare-earth metals ²⁷ ^B

SOURCE: ²⁷ AN UkrSSR. Institut problem materialovedeniya. Redkiye i redkozemel'nyye elementy* v tekhnike (Rare and rare earth elements in engineering). Kiev, Naukova dumka, 1964, 118-126

TOPIC TAGS: ²⁷ rare metal, rare earth metal, rare metal nitride, rare earth metal nitride, gallium nitride, indium nitride, scandium nitride, lanthanum nitride, cerium nitride ²⁷

ABSTRACT: ²⁷ Nearly pure gallium nitride was obtained by the treatment of gallium metal (mixed with ammonium carbonate for greater permeability) with nitrogen at 1100C. The nitride obtained resists oxidation at temperatures up to 700C. It also resists concentrated boiling sulfuric, nitric, and hydrochloric acids, but dissolves completely in boiling alkali solutions. The reduction of indium sesquioxide with ammonia at 620-630C produces a nitride containing 10.73% nitrogen as compared to stoichiometric 10.87% nitrogen. Indium nitride decomposes

Card 1/2

L 13981-65

ACCESSION NR: AT4047135

in air at 350C and dissolves in mineral acids and in alkali solutions. $\text{ScN}_{0.97}$ was obtained by the reduction of scandium oxide with carbon black in a nitrogen atmosphere. This nitride resists oxidation in air at temperatures up to 600C. It resists all but nitric acid at room temperature, but decomposes in boiling acid and alkali solutions. Lanthanum and cerium nitrides were synthesized by treatment with ammonia at 600C. In both cases, nitrides of stoichiometric composition were obtained. Orig. art. has: 5 figures and 5 tables.

ASSOCIATION: Institut problem materialovedeniya AN UkrSSR (Institute of Material-Science Problems, AN UkrSSR)

SUBMITTED: 08Jun64

ENCL: 00

SUB CODE: MM, GO

NO REF SOV: 002

OTHER: 011

ATD PRESS: 3137

Card 2/2

ACCESSION NR: AP4041575

S/0078/64/009/007/1529/1533

AUTHOR: Lyutaya, M. D.; Samsonov, G. V.; Khorpyakov, O. T.

TITLE: Germanium nitrides

SOURCE: Zhurnal neorganicheskoy khimii, v. 9, no. 7, 1964, 1529-1533

TOPIC TAGS: germanium nitriding, germanium dioxide nitriding, germanium nitride, germanium nitride structure

ABSTRACT: Conditions of synthesis of germanium nitrides have been studied with 99.99% pure germanium and chemically pure germanium dioxide as initial materials. Nitriding was performed in ammonia or nitrogen. Germanium nitride with a composition near the stoichiometric composition of Ge_3N_4 was obtained by nitriding in ammonia a mixture of germanium with ammonium carbonate (added to prevent coking) in a 1:2 ratio. Germanium begins to react with nitrogen at 700—750C; at 870C germanium nitride begins to decompose. Nitriding for 1 hr at 800C yielded a nitride with a nitrogen content of 20.52%, compared to the stoichiometric 20.46%. Satisfactory results were also obtained

Card 1/2

ACCESSION NR: AP4041575

with nitriding of germanium dioxide. Addition of ammonium carbonate to germanium dioxide decreased the reaction temperature to 750C and holding time to 1 hr from 800C and 4 hr without ammonium carbonate. X-ray diffraction analysis of the germanium nitride obtained from germanium and germanium dioxide showed that both have rhombohedral structures with the lattice constant $a = 8.567\text{\AA}$ and $\alpha = 107^\circ 54'$. Germanium nitride is fully resistant to oxidation in air up to 750--800C. In nitrogen it remains stable at temperatures up to 850C. At 900C it decomposes into elements without formation of lower nitrides. Orig. art. has: 2 figures and 6 tables.

ASSOCIATION: Institut metallokeramiki i spetsial'ny*kh splavov
AN UkrSSR (Institute of Powder Metallurgy and Special Alloys, AN
UkrSSR)

SUBMITTED: 25May63

ATD PRESS: 3065

ENCL: 00

SUB CODE: IC, MM

NO REF SOV: 006

OTHER: 007

Card 2/2

LYUTAYA, M.D.; SAMSONOV, G.V.; KHOR'YAKOV, O.T.

Germanium nitrides. Zhur. neorg. khim. 9 no. 11:1529-
1533 J1 '64.

(MIRA 17:19)

1. Institut metallokeramiki i spetsial'nykh splavov AN "Zruch"

ABSTRACT: Lanthanum germanides (LaGe , LaGe_2 and La_5Ge_3) were synthesized in an arc furnace and in a resistance furnace in an argon atmosphere. Composition of the lanthanum germanide product depends upon the ratio of the starting components (elements) and La and Ge vapor pressures. Metallic lanthanum and elemental germanium do not interact up to 900°C . Optimum conditions of preparing lanthanum digermanide (LaGe_2) in a resistance furnace are 1 to 1.5 hours melting at $1000\text{--}1100^\circ\text{C}$ in an argon atmosphere. Also, reduction of lanthanum oxide with germanium for 1 hour at 1550°C leads to formation of lanthanum digermanide. Lanthanum digermanide dissolves readily in water while LaGe and La_5Ge_3 are practically water insoluble. Thermal

Card 1/2

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Card 2/2

APPROVED FOR RELEASE: 08/31/2001

CIA-RDP86-00513R001031220017-4"

L 2788-66 EWT(m)/EWP(e)/EWP(i)/ETC/EWG(m)/T/EWP(t)/EWP(b)/EWA(c)
IJP(c) JD/JG/AT/WH

ACCESSION NR: AP5022249

UR/0363/65/001/007/1039/1043
546.631'271:536.495

AUTHOR: Lyutaya, M. D.; Akinina, Z. S.

TITLE: Chemical and thermal stability of scandium borides

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 1, no. 7, 1965, 1039-1043

TOPIC TAGS: scandium compound, boron compound, thermal stability, chemical stability

ABSTRACT: Scandium borides ScB_2 and ScB_{12} were synthesized and their chemical and thermal stability was studied. ScB_2 decomposes in concentrated HCl, H_2SO_4 and HNO_3 , the decomposition rates being the same in all three acids. ScB_{12} is stable in HCl and H_2SO_4 , but decomposes in concentrated HNO_3 . The effect of dilute acids on both borides is similar to that of concentrated acids. The chemical stability is related to the crystal structure: it increases as the structural elements consisting of boron atoms become more complex. In ScB_2 , the scandium atoms are insufficiently protected by boron atoms from the action of various reagents; on the contrary, the scandium atoms in ScB_{12} are well protected by three-dimensional boron networks. In a study of the thermal stability of the scandium borides it is

Card 1/2

L 2788-66

ACCESSION NR: AP5022249

found that the latter are stable up to 600C when heated in air. Starting at 700C, the borides decompose to form boric anhydride and scandium oxide, and atmospheric oxygen reacts with the borides to form scandium oxyborides. Orig. art. has: 6 tables.

ASSOCIATION: Institut problem materialovedeniya Akademii nauk UkrSSR (Institute of Materials Science Problems, Academy of Sciences, UkrSSR)

SUBMITTED: 11Nov64

ENCL: 00

SUB CODE: IC, TD

NO REF SOV: 006

OTHER: 001

Card 2/2 *nd*

L 4028-66 EWP(e)/EWT(m)/EWP(t)/EWP(k)/EWP(z)/EWP(b) LJP(c) JD/JG
 ACCESSION NR: AP5022250 UR/0363/65/001/007/1044/1048
 546.76'271:536.495

AUTHOR: Lyutaya, M. D.; Serebryakova, T. I.

TITLE: Thermal stability of chromium borides

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 1, no. 7, 1965, 1044-1048

TOPIC TAGS: chromium compound, boron compound, thermal stability

ABSTRACT: The thermal stability of chromium borides Cr_4B , Cr_2B , Cr_3B_2 , CrB , Cr_3B_4 , and CrB_2 in the powdered and compact state was studied in air at 500-1000C. It is found that the borides in the powdered form are practically stable when heated in air up to 600C. The lower borides (Cr_2B and Cr_3B_2) oxidize to form chromium oxyborides and chromic oxide. Cr_3B_4 and CrB_2 decompose on oxidation, forming Cr_2O_3 and boric anhydride (B_2O_3). The reaction of chromium monoboride with atmospheric oxygen up to 800C forms chromium oxyboride, which decomposes at 900C to form B_2O_3 . The most heat-stable borides in the compact state are chromium monoboride and diboride. The great stability of the monoboride up to 900C is due to an oxyboride film which forms on the sample and decomposes at 900-1000C to form B_2O_3 ; the latter serves as the protective film at these

Card 1/2

L 4028-66

ACCESSION NR: AP5022250

temperatures. The stability of the diboride at high temperatures is due to the formation, upon decomposition of CrB_2 , of boron oxide, which has high protective properties in the fused state. Orig. art. has: 5 figures and 2 tables.

ASSOCIATION: Institut problem materialovedeniya Akademii nauk UkrSSR (Institute of Materials Science Problems, Academy of Sciences UkrSSR)

SUBMITTED: 11Nov64

ENCL: 00

SUB CODE: IC, TD

NO REF SOV: 007

OTHER: 003

Card 2/2

L 11/74-66 EWP(a)/EWT(m)/EWP(i)/EWP(t)/EWP(b) LJP(c) JD/JG

ACCESSION NR: AP5022167

UR/0032/65/031/009/1066/1068

543.77:661.665

AUTHOR: Lyutaya, M. D.; Akinina, Z. S.

TITLE: Chemical phase analysis of scandium borides

SOURCE: Zavodskaya laboratoriya, v. 31, no. 9, 1965, 1066-1068

TOPIC TAGS: scandium compound, boron compound, boron, quantitative analysis

ABSTRACT: A method is proposed for determining free boron in ScB_{12} and ScB_2 , based on sintering with barium carbonate. Preliminary experiments show that amorphous boron oxidizes completely to B_2O_3 at 580C and in the presence of BaCO_3 forms a polyborate which is soluble in water. The sinter was treated with water, and boron was determined by titrating with alkali in the presence of mannitol, using phenolphthalein. ScB_{12} and ScB_2 are stable on heating to 600C in the presence of barium carbonate. Thus, free boron can be determined by sintering the samples with BaCO_3 at temperatures not exceeding 600C. Phase analysis of scandium borides for ScB_2 and ScB_{12} involved the use of hydrochloric acid solutions, in which ScB_2 decomposes with relative ease, whereas ScB_{12} remains stable. Results of chemical phase analyses of scandium borides are tabulated. Orig. art.

Card 1/2

L 11474-66

ACCESSION NR: AP5022167

3

has: 2 tables.

ASSOCIATION: Institut problem materialovedeniya Akademii nauk UkrSSR (Institute of Materials Science Problems, Academy of Sciences UkrSSR)

44,55

SUBMITTED: 00

ENCL: 00

SUB CODE: IC, G

NO REF SOV: 005

OTHER: 001

Card

2/2

90

L 32958-66 EWT(m)/EWP(t)/ETI IJP(c) JD/JG

ACC NR: AP6015739

(A)

SOURCE CODE: UR/0073/66/032/005/0433/0436

AUTHOR: Lyutaya, M. D.; Goncharuk, A. B.

ORG: Institute of Problems in the Science of Materials AN UkrSSR (Institut problem materialovedeniya AN UkrSSR)

TITLE: Chemical properties of lanthanum ²⁷germanides ²⁷

SOURCE: Ukrainskiy khimicheskiy zhurnal, v. 32, no. 5, 1966, 433-436

TOPIC TAGS: lanthanum compound, germanium compound, thermal stability, ammonia, analytic chemistry

ABSTRACT: The authors study the chemical properties of LaGe_2 , LaGe and La_5Ge_3 at room temperature in air and in water, and the thermal stability of these compounds in air and in an ammonia atmosphere. The lanthanum germanides used in the study were synthesized from lanthanum and germanium in an arc furnace. Interaction between the germanides and water was determined from the quantity of water passing into solution with decomposition of the lanthanum germanides. Powdered materials with particles measuring 40-50 μ were used for studying the thermal stability of the lanthanum germanides. A sample of the powder was held at a given temperature for a certain length of time and the oxidation products were then subjected to chemical analysis. Specimens of the three compounds were interacted with ammonia at temperatures of 500-700°, and the pro-

Card 1/2

UDC: 546.654.289.1

L 32958-66

ACC NR: AP6015739

ducts of the reaction were then chemically analyzed. The experimental data are tabulated. It was found that lanthanum digermanide LaGe_2 is easily decomposed by moisture while LaGe and La_5Ge_3 are practically stable in water. There is a direct relationship between the composition of the lanthanum germanides and their stability in air and in an ammonia atmosphere. Lanthanum digermanide is more resistant to atmospheric oxidation at $200-400^\circ$ and to interaction with ammonia at $500-700^\circ$ than are LaGe and La_5Ge_3 under the same conditions. Intermediate compounds, lanthanum hydroxygermanides, are formed in the germanide oxidation process. A compound with the empirical formula LaGeN is produced by interactions between LaGe and ammonia at $500-700^\circ$. La_5Ge_3 also interacts with ammonia in this temperature range. Orig. art. has: 1 figure, 4 tables.

SUB CODE: 07/ SUBM DATE: 09Nov64/ ORIG REF: 005/ OTH REF: 002

Card 2/2

L 44361-66 EWT(m)/EWP(k)/EWP(e)/EWP(t)/ETI IJP(c) JD

ACC NR: AP6007295

SOURCE CODE: UR/0226/66/000/002/0108/0109

REPORTER: Lyutaya, M. D.; Goncharuk, A. B.

ORG: none

TITLE: All-Union Inter-Institute Seminar on the Production, Properties and Applications of the Nitrides (held in Kiev from 20 to 22 April 1965) III

SOURCE: Poroshkovaya metallurgiya, no. 2, 1966, 108-109

TOPIC TAGS: metallurgic conference, nitride, nitride compound, metallurgic research

ABSTRACT: The Seminar was attended by ~100 delegates from >30 research and academic institutions of the Soviet Union. 32 papers were presented. They dealt with such topics as: a classification of nitrides based on theories of their electron structure and chemical bonding (G. V. Samsonov); production of the nitrides of rare-earth, rare, disseminated and transition metals (M. D. Lyutaya and others); experimental production of aluminum nitride from the gaseous phase (N. G. Slavina and A. A. Pletyushkin); production of transition-metal nitrides by nitriding metal powders and reducing and nitriding metal oxides (G. V. Samsonov and V. S.

Card 1/2

L 44361-66

ACC NR: AP6007295

10

Polishchuk); research into ¹nitride alloys (L. M. Katanov and others); fabrication of work parts from nitrides (L. I. Struk and others); research into the evaporation of nitrides (V. V. Fesenko and others); studies of the superconductivity, and thermoemissive and refractory properties of the nitrides (O. I. Shulishova and others). S. M. Ariya and associates presented an interesting paper on the formational enthalpy of titanium nitrides as a function of their composition, while T. N. Nazarchuk presented a general survey of methods of the chemical analysis of nitrides. The resolution adopted by the Seminar noted the high level of the presented papers and outlined further ways and means of enhancing the effectiveness of nitride research. In particular, it pointed to the need to intensify R&D work on high-purity nitrides and to broaden the studies of the physical properties of nitrides and nitride-base alloys by utilizing x-ray spectral, galvanomagnetic, magnetic, spectroscopic and other methods. The proceedings of the Seminar will be published in a special volume.

SUB CODE: 11-~~20223~~ 07/ SUBM DATE: none/

Card 2/2 hs

ACC NR: AP6020961

SOURCE CODE: UR 0226/66/000/006/0060/0063

AUTHOR: Lyutaya, M. D. ; Goncharuk, A. B.

ORG: Institute for Problems in Science of Materials, AN UkrSSR (Institut problem materialovedeniya AN USSR)

TITLE: Lanthanum germanides

SOURCE: Poroshkovaya metallurgiya, no. 6, 1966, 60-63

TOPIC TAGS: germanide, lanthanum, lanthanum germanide, germanothermic method, ~~CHEMICAL SYNTHESIS, CHEMICAL REDUCTION~~

ABSTRACT: The authors have investigated conditions for synthesizing lanthanum germanides LaGe_2 , LaGe , and La_5Ge_3 from elements in an arc furnace and lanthanum digermanide by the germanothermic method, i. e., reduction of lanthanum oxide with germanium in vacuo. Some chemical properties of lanthanum germanides,

14

Card 1/2

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ACC NR: AP6020961

stability of germanide powders in water, and thermal stability in air and in ammonia have been studied. It has been shown that the thermal oxidation of lanthanum germanides in air is followed by the formation of lanthanum hydroxygermanides as intermediate products. The interaction of lanthanum monogermanide with ammonia yields an LaGeN product. Orig. art. has: 2 figures and 2 tables. [Based on authors abstract] [AM]

SUB CODE: 11/ SUBM DATE: 18Mar66/ ORIG REF: 003/ OTH REF: 002/

Card 2/2

SHTROBEL', V.; ROMANKOV, P.G.; KONOVALOV, V.I.; LYUTAYA, N.S.

Study of mass transfer in a rotor-disk extractor. Zhur.prikl.khim.
37 no.1:5C-58 Ja '64. (MIRA 17:2)

1. Leningradskiy tekhnologicheskij institut imeni Lensoвета.

SHTROBEL', V.; ROMANKOV, P.G.; KONOVALOV, V.I.; LYUTAYA, N.S.

Study of hydrodynamics without mass transfer and in the presence
of mass transfer in a rotor-disk extractor. Zhur. prikl. khim.
36 no.12:2672-2680 D'63. (MIRA 17:2)

1. Leningradskiy tekhnologicheskij institut imeni Lenseveta.

SOYFER, V.M.; LYUTAYA, V.A.

Using a silica composition for the rammed lining of small steel-pouring ladles. Ogneupory 30 no.10:5-6 '65. (MIRA 18:10)

1. Khar'kovskiy zavod "Elektrotyazhmash" im. V.I. Lenina.

LYUTAYEVA, V. A.

Lyutayeva, V. A. -- "Paraffinotherapy of exudative pleuritis," Sbornik
trudov (Tomskiy obl. nauch.-issled. in-t fiz. metodov lecheniya i kurortologii),
Vol. VI, 1949, p. 183-88

SO: U-5241, 17 December 1953, (Letovis 'zhurnal 'nykh Statey, No. 26, 1949).

YAROSLAVSKIY, M.I.; LYUTENBERG, R.M.; CHERNYSHOV, V.N.

Instrument for the analysis of the piezoelectric properties of
crystals. Zhur.tekh.fiz.26:439-441 F '56. (MIRA 9:6)
(Piezoelectricity--Measurement)

LYUTENBERG, R.M.
TERENIN, D.F., kand.tekhn.nauk; LYUTENBERG, R.M., inzh.

Quality of oxidized coals of the Kuznetak Basin and their
use in locomotives. Vest. TSNII MPS 16 no.8:24-30 D '57.

(MIRA 11:1)

(Locomotives) (Kuznetak Basin--Coal--Analysis)

TERENIN, D.F.; LYUTENBERG, R.M.

Using oxidized Kuznetsk Basin coal in railroad transportation.
Bul.tekh.-ekon.inform. no.5:70-71 '59. (MIRA 12:8)
(Railroads--Fuel)

KORCHEV, V.V., kand. tekhn. nauk; LYUTENBERG, R.M., inzh.

Testing of diesel fuels in a small cylinder capacity engine. Vest.
TSNII MPS 22 no.8:27-30 '63. (MIRA 17:2)

LYUTENBERG, S. Ya.

LYUTENBERG, S. Ya.; PAVLOTSKAYA, L. I.

Feeding methods in the ward for newborn infants and the use of
bran decoction as source of vitamin B. *Pediatrics* no. 2:87
Mr-Apr '54. (MLRA 7:6)

1. Iz Kuybyshevskogo oblastnogo nauchno-issledovatel'skogo
instituta okhrany materinstva i detstva.
(INFANTS (NEWBORN)—NUTRITION) (VITAMINS)

LYUTENKO, A N

AUTHOR: None Given 72-2-19/20

TITLE: For the Industry of Ceramics - a Progressive Technology (Kerami-cheskoy promyshlennosti - peredovuyu tekhnologiyu).

PERIODICAL: Steklo i Keramika, 1958, Nr 2, pp. 46-47 (USSR)

ABSTRACT: A technical conference of the functionaries of the ceramic industry took place in Khar'kov in December 1957, which was organized by the Ukrainian administration of the Scientific-Technical Society of the building material industry and the Ministry of Building Material Industry of the Ukrainian SSR. The conference was attended by functionaries of the works producing ceramics in the Ukraine and the Russian Federation, the Economic Councils of Stalinsk and Khar'kov, the state-controlled offices for Economic Planning of the USSR, the RSFSR, and the Ukrainian SSR, the Building- and Building-Material Department of the TsK KPU and of the Scientific Research- and Planning Institutes. The results obtained in the Ukrainian Ceramic Industry and prospects for the future were discussed. Particular attention was paid to the utilization of progressive experience in the industry as well as to the introduction of new technical methods, high-efficiency equipment, and a progressive technology.

Card 1/4

For the Industry of Ceramics - a Progressive Technology

72-2-19/20

- 1.) I.I.Moroz (Minister for the Building Material Industry of the Ukrainian SSR) delivered a report on the work and the prospects of the ceramics industry.
- 2.) A.A.Kopeykin (Director of the NIIsstroykeramiki) spoke about the work carried out by his institute. He was reproached for talking too much about future plans and too little about work already completed.
- 3.) A.A.Grebennik (Head of the PKB NIIsstroykeramiki), after his report, was criticized for the same reasons as Kopeykin.
- 4.) Dudnik (TsKB MPSM Ukrainian SSR, Khar'kov) spoke about the introduction of new equipment and assembly lines.
- 5.) N.I.Dikerman (Chief Engineer of the Administration of the Mosstroyaterialy) stated that the efficacy of the brick charging devices for tunnel kilns at present no longer corresponds to the increased efficiency of the kilns.
- 6.) A.N.Lyutenko (Chief Engineer of the Administration of the Economic Council, Khar'kov) spoke about production reserves of plants.
- 7.) S.M.Beluga (Chief Engineer of the Metlakh Tile Works, Khar'kov) spoke about the mechanization of production.

Card 2/4

For the Industry of Ceramics - a Progressive Technology

72-2-19/20

- 8.) L.K.Parnovskiy (Director of the Ceramics Factory, Lvov) spoke about success achieved in production.
- 9.) P.Ye.Andrianov delivered a report on the ceramics industry of Italy.
- 10.) M.D.Abramovich (Director of the Combined Plant "Keramik" at Kiyev) spoke about the organization of the production of mosaic tiles.
- 11.) S.M.Brekhovskikh (Chief Specialist for Glass of the Gosplan USSR) criticized the lack of reports concerning the stage of furnace technology.
- 12.) A.N.Lyutenko, G.A.Soldatov, S.M.Beluga, M.V.Gordyga and F.K.Perre reported on the unfavorable situation of the raw material sector, which impairs the delivery of high-quality raw materials to factories and plants.

Decisions were made for the purpose of improving industrial work, for the purpose of reducing time needed for smelting and drying, with a view of speeding up mechanization and improving the quality of products, as well as of increasing production and reducing initial costs.

Card 3/4

For the Industry of Ceramics - a Progressive Technology

72-2-19/20

AVAILABLE: Library of Congress

Card 4/4

LYUTENKO E.N.

72-2-19/20

Author

Name Given

Title

For the Industry of Ceramics - A Progressive Technology (Kerami-
cheskoy promyshlennosti - peredovuyu tekhnologiyu).

Nr 2, pp. 46-47 (USSR)

ABSTRACT:

Staklo i Keramika, 1958.

A technical conference of the functionaries of the ceramic industry took place in Khar'kov in December 1957, which was organized by the Ukrainian administration of the Scientific-Technical Society of the building material industry and the Ministry of Building Material Industry of the Ukrainian SSR. The conference was attended by functionaries of the works producing ceramics in the Ukraine and the Russian Federation, the Economic Councils of Stalinsk and Khar'kov, the state-controlled offices for Economic Planning of the USSR, the RSFSR, and the Ukrainian SSR, the Building and Building-Material Department of the TsK KFU and of the Scientific Research and Planning Institutes. The results obtained in the Ukrainian Ceramic Industry and prospects for the future were discussed. Particular attention was paid to the utilization of progressive experience in the industry as well as to the introduction of new technical methods, high-efficiency equipment, and a progressive technology.

Card 1/4

"APPROVED FOR RELEASE: 08/31/2001

CIA-RDP86-00513R001031220017-4



APPROVED FOR RELEASE: 08/31/2001

CIA-RDP86-00513R001031220017-4"

For the Industry of Ceramics - a Progressive Technology

72-2-19/20

- 8.) L.K. Parnovskiy (Director of the Ceramics Factory, Lvov) spoke about success achieved in production.
- 9.) P. Ye. Andrianov delivered a report on the ceramics industry of Italy.
- 10.) M. D. Abramovich (Director of the Combined Plant "Keramik" at the production of the production of mosaic

- Italy.
- 10.) M.D. Abramovich (Director of the Combined Plant "Kryukov" in Kiyev) spoke about the organization of the production of mosaic tiles.
 - 11.) S.M. Brekhovskikh (Chief Specialist for Glass of the Gosplan USSR) criticized the lack of reports concerning the stage of furnace technology.
 - 12.) A.N. Lyutenko, G.A. Soldatov, S.M. Baluga, M.V. Gordyga and F.A. Ferre reported on the unfavorable situation of the raw material sector, which impairs the delivery of high-quality raw materials to factories and plants.

Decisions were made for the purpose of improving industrial work for the purpose of reducing time needed for smelting and drying, with a view of speeding up mechanization and improving the quality of products, as well as of increasing production and reducing initial costs.

Card 3/4

AUTHOR: Lyutenko, A Ye SOV-128-58-10-15/19

TITLE: Experience in the Application of Cherkassy Bentonite in the Production of Steel Castings (opyt primeneniya cherkasskogo Bentonita v proizvodstve stal'nogo lit'ya)

PERIODICAL: Liteynoye proizvodstvo, 1958, Nr 10, p 31 (USSR)

ABSTRACT: The zavod "Irpen mashtorf" ("Irpen mashtorf" Plant) used local 40/70 sand in mold-making for pig iron and steel castings. Removal of the sand crust picked up in casting was a negative factor. The Institut Mashinovedeniya (Institute of Mechanical Engineering) under the direction of Corresponding Member of AS Ukr SSR, A. A. Gorchkov, recommended the use of bentonite from the ~~Cherkassy~~ Cherkassy (Ukraine) region. The author conducted production experiments in the plant, and obtained good results with this bentonite in mold and core making. Since then the plant has used this bentonite for 14 months with positive results. Mixture percentages are given, and it is recommended that bentonite be used in the foundries of the ~~Kiyev~~ Kiyev Economic Region.

1. Steel castings--Production 2. Bentonite--Applications

Card 1/1

LYUTENKO, F.D.; VERESHCHAGIN, A.P.

Using the BF-2 glue in repairing metal-cutting equipment. Stan.1
instr. 28 no.9:42-43 S '57. (MIRA 10:10)
(Glue) (Machinery--Maintenance and repair)

LYUTENKO, L.Ya., inzh.

A stand for breaking down and assembling the supporting rollers
of a tractor. Trakt. i sel'khoz mash. 32 no.10:45-46 0 '62.
(MIRA 15:9)

1. Novomoskovskiy remontnyy zavod.
(Tractors—Repairing)

LYUTENKO, L.Ya., inzh.

Washing installation. Mekh. stroi. 20 no.4:23-24 Ap '63.
(MIRA 16:3)

(Construction equipment--Maintenance and repair)

L 15691-65 FSF(h)/FSS-2/EWT(1)/EEC(m)/FS(v)-3/EWG(s)-2/EWG(v)/FCC/EWA(d)/
 EEC-4/EEC(t)/EWA(h) Po-4/Pe-5/Pq-4/Pg-4/Pi-4/Pl-4/Pae-2/Peb/Pb-4 AEDC/
 AFETC/AFMDC/ESD-3/RADC/APGC/ESD(t)/ESD(ri)/AEDC(a)/SSD/BSA/AFWT/AFMDC/AFETR/
 ACCESSION NR: AP5000175 AFTC(b)/AFTC(a)/ASD-3 S/0293/64/002/006/0928/0932
 TT/GW/WS

AUTHOR: Shafer, Yu. G.; Sokolov, V. D.; Skryabin, N. G.; Lyutenko, V. F.; Yarygin,
 A. V.; Salimzibarov, R. B.

TITLE: Intensity distribution of cosmic rays in the atmosphere to a height of
 500 km

SOURCE: Kosmicheskiye issledovaniya, v. 2, no. 6, 1964, 928-932

TOPIC TAGS: solar activity cycle, cosmic ray, geophysical rocket, single counter,
 ionization camera, Kosmos satellite, cosmic ray albedo, magnetic storm

ABSTRACT: In the period from 1958 to 1963, during a decrease in solar activity,
 cosmic ray measurements have been carried out by means of geophysical rockets and
satellites of the Kosmos type. Geophysical rockets were equipped with single
 counters and ionization cameras. Satellites of the Kosmos type were equipped with
ionization cameras, single counters, and counting telescopes for measuring the
 cosmic ray albedo. Rocket and satellite launchings were scheduled for days with-
 out magnetic storms and quiet sun. Primary cosmic rays were measured at heights
 of 100--500 km. The cosmic ray albedo measured by rockets equipped with special

Card 1/2

L 15691-65

ACCESSION NR: AP5000175

devices was found to be insignificant. Numerical values of measurement data show a slight increase in particle count with height. No indications were found which would associate systematic variations in the intensity of primary cosmic rays with the eleven-year cycle of solar activity. Orig. art. has: 1 figure and 3 tables.

ASSOCIATION: none

SUBMITTED: 13May64

ENCL: 00

SUB CODE: AA, SV

NO REF SOV: 003

OTHER: 008

ATD PRESS: 3144

Card 2/2

LYUTENKO, V.F.

LYUTENKO, V.F., inzhener.

Correcting the frequency of a quartz crystal. Vest.sviazi 16
no.10:17 0 '56. (MIRA 10.10)

1. Yakutskiy radiotsentr.
(Oscillators, Crystal)

LYUTENKO, V.F.
LYUTENKO, V.F., inzh.; ZAMYATIN, K.M., tekhnik.

Using a heterodyne wavemeter as an exciter. Vest.sviazi 17 no.8:
32-33 Ag '57. (MIRA 10:10)

1. Yakutskiy radiotsentr (for Lyutenko).
(Radio--Transmitters and transmission)

S/845/62/000/004/001/013
E192/E382

9.15.
AUTHORS: Grigorov, N.L., Sokolov, V.D. and Lyutenko, V.F.
TITLE: Measurement of slow neutrons from cosmic rays on aircraft
SOURCE: Akademiya nauk SSSR. Yakutskiy filial. Trudy. Seriya fizicheskaya. no. 4. 1962. Variatsii intensivnosti kosmicheskikh luchey, 4 - 9
TEXT: An instrument for measuring slow neutrons in cosmic rays is described. This is based on the principle of an integrating ionization chamber which is filled with gaseous BF_3 .
The ionization current of such a device consists of two components: that due to the decay of B^{10} and that due to all the remaining ionizing effects.¹⁰ In order to separate the ionization current due to the decay of B^{10} the current produced by the other effects is compensated by a second ionization chamber. The two chambers are spherical with internal diameters of 20 cm; the walls are steel, 1 mm thick. The collector electrodes are connected together into one electrical system. The capacitance of the chambers with the system of electrodes is about 12 pF. The spheres are electrically
Card 1/3

S/845/62/000/004/001/013
E192/E382

Measurement of

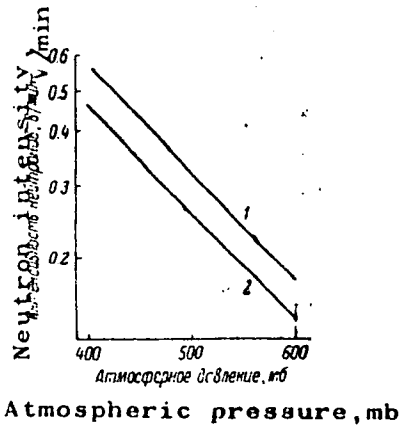
insulated and voltages of opposite signs are applied to them. A certain charge produced by the neutron-ionizing current is stored on the collecting electrode of the chambers during a unit time Δt ; the magnitude of this charge is proportional to the intensity of the neutrons and the charge can be measured by the method described by N.I. Grigorov (UFN, 8, no. 4, 1956). In this method the charge on the collector electrode is converted into a voltage pulse of definite magnitude. The pulses so obtained are applied to the input of a cathode-follower tube; the pulse is negative and is of about 850 μ s duration. This pulse is applied to an amplifier and then to a nonlinear amplifying stage, where it is lengthened to about 40 msec but where its amplitude is still proportional to that of the input pulse. It is then fed to a switching audio circuit, whose output signal is in the form of an audio pulse of 3 kc/s; the duration of this audio pulse is proportional to the charge stored on the collector electrodes of the chambers. The audio pulse is applied to a counter which records the number of cycles. The circuit for measuring the charge is based on directly-heated tubes. The equipment was used between August 24 - 29, 1959, in flying
Card 2/3

Measurement of

S/845/62/000/004/001/013
E192/E382

aircraft at Yakutsk. It was first checked by using Co^{60} γ -source. The neutron intensity was measured as a function of the atmospheric pressure and the results averaged over five flights are illustrated in Fig. 3. There are 3 figures.

Fig. 3:



Card 3/3

GRIGOROV, N.L.; SOKOLOV, V.D.; LYUTENKO, V.F.

Measurement of slow neutrons in cosmic rays on an airplane.
Trudy IAFAN SSSR. Ser. fiz. no.4:4-9 '62. (MIRA 15:12)
(Cosmic rays)
(Neutrons)

KAZANSKIY, B.A.; DOROGOCHINSKIY, A.Z.; ROZENGART, M.I.; LYUTER, A.V.;
MITROFANOV, M.G.

Aromatization of narrow hexane fractions of Grozny gasoline on
an alumina-chromic oxide catalyst. Kin. i kat. 1 no. 2:204-299
Jl-Ag '60. (MIRA 13:8)

1. Institut organicheskoy khimii im. N.D. Zelinskogo AN SSSR i
Groznen'skiy nauchno-issledovatel'skiy neftyanoy institut.
(Aromatization)
(Hexane)

5.3300
AUTHORS:

Dorogochinskiy, A. Z., Lavrent'yev, V. I.,
Lyuter, A. V., Mel'nikova, N. P.,
Kupriyanov, V. A.

68998
S/020/60/131/02/045/071
B011/B011

TITLE: Synthesis and Properties of Naphthenic Hydrocarbons With a Long Side Chain

PERIODICAL: Doklady Akademii nauk SSSR, 1960, Vol 131, Nr 2, pp 367 - 370 (USSR)

ABSTRACT: The authors wanted to work out a general method and conditions for the synthesis of technical fractions of the substances mentioned in the title, as well as the study of the properties of these fractions. Propylene, butylene, amylene, hexylene, and heptylene were used for the purpose. As a result of the experiments conducted at the authors' institute, a 3-stage scheme of synthesis was suggested: 1) synthesis of olefins with a given number of C-atoms, or polymerization, respectively. A dehydrated pentane-amylene fraction from thermal cracking, purified from the sulphur compounds, was utilized. The catalyst was phosphoric acid on kieselgur. Olefins with ramified structure were obtained in this connection. The highest yield of isodecenes occurred at 170-180°, pressure of 50-60 atm, volume rate 3-4 h⁻¹. Amylenes

Card 1/4

Synthesis and Properties of Naphthenic Hydrocarbons
With a Long Side Chain

68998
S/020/60/131/02/045/071
B011/B011

were transformed to 70%. A concentrate boiling between 120 and 185° was obtained from the polymerizate (yield 85-90%). Table 1 shows the resulting (mostly ramified) structures of isodecenes. Table 2 shows their physico-chemical properties (the raw material was fraction 6 of the thermal cracking and benzene). Isomerization and hydro-dehydro polymerization of the olefins were ascertained as side reactions. 2nd stage: alkylation. Aromatic hydrocarbons (benzene, toluene) were alkylated by means of the isodecenes produced (Refs 3-5). The best conditions were: 97% H_2SO_4 , reaction time 2 hours, ratio benzene:isodecene = 5:1. Temperature 10-20°. The alkylate amounted to 140% by weight of olefins or 90% of the theoretical yield. A fraction boiling between 180° and 350° was obtained from the alkylate as a concentrate of isodecyl benzenes (85% of the alkylate). It chiefly consisted of mono-substituted derivatives of benzene (Table 2). On using aluminum chloride as catalyst the yield was higher and attained 97-98%. Disproportionation occurred as side reaction. 3rd stage: hydrogenation. The alkylate concentrate was hydrogenated on 2 catalysts: a) nickel catalyst. The optimum conditions were: pressure 7 atm, molar ratio hydrogen:alkylate = 2.8:1; 150-200°.

Card 2/4

Synthesis and Properties of Naphthenic Hydrocarbons
With a Long Side Chain

68998
S/020/60/131/02/045/071
B011/B011

Volume rate 0.2 h^{-1} ; b) nickel-tungsten catalyst. Optimum conditions: pressure in the reaction zone 200 atm; molar ratio hydrogen-alkylate = 64:1; 300° ; volume rate 0.5 h^{-1} . To prevent a temperature increase on the latter catalyst, the alkylate was diluted with gasoline distillate (fraction $80-120^\circ$) of the trade-mark "Kalosha" in a ratio of 1:2. Destruction was recorded as a side reaction. The desired naphthene fraction was obtained from the hydrogenation product by rectification. It boils out between 180° and 350° . Its yield attained 90% of the aromatic hydrocarbons contained in the alkylate (Table 2). The range of the fluctuation of properties in dependence on procedure and raw materials is shown in table 3. Data obtained show that the scheme described here leads to naphthene hydrocarbons with a long side chain, high density, high calorificity, and a low freezing temperature. The following names are mentioned: Ye. G. Vol'pova, L. A. Potolovskiy, I. F. Blagovidov, L. I. Kostikin, Yu. A. Gol'dshtein, Yu. I. Kozorezov, A. Z. Dorogochinskiy, and K. I. Zimina. There are 3 tables and 6 Soviet references.

Card 3/4

Synthesis and Properties of Naphthenic Hydrocarbons
With a Long Side Chain

ASSOCIATION: Groznenskiy neftyanoy nauchno-issledovatel'skiy institut
(Groznyy Scientific Research Institute of Petroleum)

PRESENTED: November 28, 1959, by B. A. Kazanskiy, Academician

SUBMITTED: November 25, 1959

Card 4/4

LYUTER, A.V.

СВЯЗЬ И СВОЙСТВА НАФТЕНОВЫХ УГЛЕВОДРОДОВ
С ДЛИННОЙ БОКОВОЙ ЦЕПЬЮ

А. В. Лютер, В. Н. Лопатин, А. В. Лопатин
В. Н. Лопатин, В. А. Мухоморов

VIII Mendeleev Congress for General and Applied Chemistry in
Section of Chemistry and Chemical Technology of Fuels,
publ. by Acad. Sci. USSR, Moscow 1979

abstracts of reports scheduled to be presented at above mentioned congress,
Moscow, 13 March 1979.

KAZANSKIY, B.A.; DOROGOCHINSKIY, A.Z.; ROZENGART, M.I.; LYUTER, A.V.;
MITROPANOV, M.G.

Effect of the feed rate on the process of aromatization of n-hexane
over an aluminum-chromium catalyst. Kin. i kat. 2 no.2:258-262
Mr-Apr '61. (MIRA 14:6)

1. Institut organicheskoy khimii AN SSSR imeni N. D. Zelinskogo
i Gorzneskiy neftyanoy nauchno-issledovatel'skiy institut.
(Hexane)
(Aromatization)

S/204/62/002/004/003/019
EO71/E433

AUTHORS: Kazanskiy, B.A., Dorogochinskiy, A.Z., Sterligov, O.D.,
Lyuter, A.V., Dmitriyevskiy, M.L., Nazarov, P.S.

TITLE: Dehydrogenation of isopentane into isoamylenes on an
alumochromopotassium catalyst

PERIODICAL: Neftekhimiya, v.2, no.4, 1962, 448-456

TEXT: A systematic study of the process of dehydrogenation of
isopentane into isoamylenes under conditions of a stationary and
moving layer of granulated catalyst K-544 was carried out on
experimental installations of Groz NII. Tests on the stationary
layer were carried out on a laboratory and an enlarged
installation. The reactors with a stationary layer of the
catalyst were of the capacity of 40 and 500 cm³ respectively.
Tests in the moving layer were made in a co-current continuous
pilot plant with a reactor (4 litres) and a regenerator (4.7 litres).
The volume of the catalyst - 35 litres, throughput - about
100 litres/day, the velocity of circulation of the catalyst -
up to 16 litres/hour. The analyses of the reaction products were
made by chromatographic and other chemical methods. The influence
of the temperature, volume velocity and rate of recirculation of
Card 1/2

S/204/62/002/004/003/019
E071/E433

Dehydrogenation of isopentane ...

the catalyst on the main parameters of the process as well as the behaviour of the catalyst were studied. It was found that the catalyst had a good and stable activity. During an operating period of 1100 hours in a stationary layer and 400 hours in a moving layer its activity remained practically unchanged. Under the optimum condition of the process (temperature - 540°C and volume velocity - 1 hour⁻¹) the yield of isoamylenes amounted to 30 to 31 wt.% calculated on raw material (98.6% of isopentane) with a total yield of unsaturated hydrocarbons C₅ of 34 to 38 wt.%. The catalyst has a satisfactory strength and good regeneration characteristics. The velocity of burning out of coke from the most inaccessible layers of catalyst K-544 amounted to 20 litres/litre of catalyst per hour, in comparison with that for aluminosilicate catalysts of 13 to 16 litres/litre of catalyst per hour. There are 6 figures and 5 tables. ✓

ASSOCIATION: Institut organicheskoy khimii AN SSSR
im. N.D.Zelinskogo (The Institute of Organic
Chemistry AS USSR imeni N.D.Zelinskiy) GrozNII

Card 2/2

KAZANSKIY, B.A.; DOROGUCHINSKIY, A.Z.; ROZENGART, M.I.; TYUN'KINA, N.I.;
KUZNETSOVA, I.M.; LYUTER, A.V.; MITROFANOV, M.T.

Aromatization of mixtures of n. hexane with 2-methylpentane,
with 3-methylpentane or methylcyclopentane. Izv.AN SSSR.Otd.
khim.nauk no.7:1308-1309 J1 '62. (MIRA 15:7)

1. Institut organicheskoy khimii im. N.D.Zelinskogo AN SSSR.
(Aromatization) (Paraffins)

DOROGOCHINSKIY, Akiy Zinov'yevich; LYUTER, Aleksandr Valentinovich;
VOL'POVA, Yevgeniya Grigor'yevna; REKHVIASHVILI, Antonina
Nikolayevna; ROLESNIKOV, F.M., red.; KUZ'MENKOVA, N.T.,
tekhn. red.

[Oil gases in the Chechen-Ingush and other economic regions
of the Northern Caucasus] Neftianye gazy Checheno-Ingushskogo
i drugikh ekonomicheskikh raionov Severnogo Kavkaza. Grozny
Checheno-Ingushskoe knizhnoe izd-vo, 1960. 259 p.
(MIRA 16:3)

(Caucasus, Northern—Gas, Natural)

KAZANSKIY, B.A.; DOROGOCHINSKIY, A.Z.; ROZENGART, M.I.; GITIS, K.M.;
LYUTER, A.V.; MITROFANOV, M.G.

Effect of the length of an alumina-chromia-potassium
catalyst layer on the aromatization of n-heptane. (MIRA 16:5)
Kin.1 kat. 4 no.2:315-318 Mr-Ap '63.

1. Institut organicheskoy khimii AN SSSR imeni N.D.Zelinskogo i
Groznenkiy neftyanoy nauchno-issledovatel'skiy institut.
(Heptane) (Aromatization) (Catalysts)

KAZANSKIY, B.A.; DOROGOCHINSKIY, A.Z.; SIERLIGOV, O.D.; LYUTER, A.V.;
DMITRIYEVSKIY, M.L.; NAZAROVA, M.P.; REKHVIASHVILI, A.N.

Studying the dehydrogenation of isopentane on K-544 and K-5
finely divided catalysts. Trudy GrozNII no. 15:241-253 '63.
(MIRA 17:5)

KAZANSKIY, B.A.; DOROGUCHINSKIY, A.Z.; ROZENGART, M.I.; LYUTER, A.V.;
MITROFANOV, M.G.; BRESHCENKO, Ye.M.; KALITA, L.A.; GOL'DSHTEYN,
Yu.A.; AFANAS'YEV, A.I.; MAKAR'YEV, S.V.; ZAMANOV, V.V.

Dehydrocyclization of normal hexane. Trudy GrozNII no. 15:
254-264 '63. (MIRA 16:5)

KAZANSKIY, B.A.; DOROGCHINSKIY, A.Z.; ROZENGART, M.I.; KUZNETSOVA, Z.F.;
LYUTER, A.V.; MITROFANOV, M.G.

Changes in alumina-chromia catalysts during the aromatization of
n-hexane. Kin.i kat. 4 no.5:768-772 S-O '63. (MIRA 16:12)

1. Institut organicheskoy khimii AN SSSR imeni N.D.Zelinskogo
i Groznenskiy neftyanoy nauchno-issledovatel'skiy institut.

LYUTER, A. V

5060. DETERMINATION OF UNSATURATED HYDROCARBONS IN THE BUTANE-BUTYLENE FRACTION BY ABSORPTION IN BROMINE WATER. Dorogochinskii, A. Z., Lyuter, A. V. and Musnikova, D. M. (Azerbaidzhanskoe Neftyanoe Khoz., 1947, 26, No. 3, 15-18; Chem. Abstr. 1947, 41, 5818).

The absorption of unsaturated hydrocarbons by Br_2 water is best when the reagent is fresh although the results are usually too high. If the saturated, aqueous solution of Br is treated with KBr , the usefulness of the reagent is extended. In most cases a solution saturated with Br and 30% saturated with KBr is to be recommended. The results are within 1-1.5% of the truth. Isobutane does not affect the results, but 5% of pentanes causes errors of about 5%.

A S & S L A METALLURGICAL LITERATURE CLASSIFICATION

ALL INFORMATION CONTAINED
HEREIN IS UNCLASSIFIED

APPROVED FOR RELEASE: 08/31/2001

CIA-RDP86-00513R001031220017-4"

LYUTER, A.V.; VOL'POVA, Ye.G.; GOL'DSHTEYN, Yu.A.

Efficient methods for manufacturing alkylarylsulfonate washing
in Grozny. Trudy GrozNII no.4:218-223 '59. (MIRA 12:9)
(Groznyi--Cleaning compounds) (Sulfonol)

LYUTER, B. A.

LYUTER, B. A. "Estimating the influence of high-frequency noise on the operation of synchronous generators with auxiliary windings", *Elektricheskaya Energiya*, No. 4, 1967, p. 49-52, - Bibliography: 6 items.

NO: U-4042, 11 March 63, (Letopis 'Zhurnal tekhnicheskoy fiziki', No. 1189).

SA B 66 C

1264. Torque of a synchronous generator during asynchronous operation. LYUTIN, R. A. *Vestn. Elektrom. (No. 10) 1-11 (1948) in Russian.*—Two cases are considered: (1) a synchronous machine operating without exciter which is short-circuited, and (2) synchronous machine with d.c. excitation in the rotor circuit approaching or falling out of synchronism. A concise mathematical treatment is developed, based on operator reactances, but neglecting the effect of the back e.m.f. Formulae for various parameters are tabulated and the equivalent circuit diagrams are shown.

ASM-51A METALLURGICAL LITERATURE CLASSIFICATION

SEARCHED MAP ONLY ONE

RELATION ONE

RELAST ONE ONLY ARE

LYUTER, R. A.

Nov 48

USSR/Electricity - Machinery, Design
Currents, Electric
Direct

"Physical Limitations in DC Machines and Certain Related Problems of Design," V. I. Kas'yanov, A. A. Kashin, R. A. Lyuter, I. N. Rabinovich, D. V. Shapiro, Laureates of Stalin Prize, Elektrosil' Factory imein Stalin, 5 pp

"Vest Elektro-Prom" No 11

Points out increasing importance of DC machines and new design problems cropping up. Devotes attention to problem of increasing the ultimate power of DC motors for a given diameter of their armatures--permitting an increase in motor speed, decrease in weight and dimensions, and decrease in flywheel moment for reversible motors. Analyzes means of increasing ultimate power and commutating ability, and improving design, and points out other problems requiring attention.

PA 65/49T42

ORLOVSKIY, A.V., professor; LYUTER, R.A., doktor tekhnicheskikh nauk; KAZOVSKIY, Ye.Ya., kandidat tekhnicheskikh nauk; YAKOBSON, El'mar, inzhener; ANTOPOL'SKIY, V.M., inzhener; PUKHOV, G.Ye., doktor tekhnicheskikh nauk; FYURSTENBERIN, A.I., inzhener; BERGER, A.Ya., professor (Leningrad); TSVERAVA, G.Z., inzhener; KRAYNIY, K.I., inzhener (g.Kotovsk, Tambovskoy obl.); BELOV, V.N., inzhener (g.Ul'yanovsk).

Correspondence conference of readers of "Elektrichestvo." Elektrichestvo
no.8:89-91 Ag '53. (MLSA 6:8)

1. Kiyevskiy politekhnicheskii institut (for Orlovskiy).
2. Zavod "Elektrosila" (for Lyuter and Kazovskiy).
3. Estonkommunenergo (for Yakobson).
4. Saratovskiy industrial'nyy tekhnikum (for Antopol'skiy).
5. Tomskiy politekhnicheskii institut imeni Kirova (for Pukhov).
6. Tikhvinskiy glinozemnyy zavod (for TSverava). (Electric engineering--Periodicals)

4 y 1955 R 1

Subject : USSR/Electricity AID P - 3024

Card 1/2 Pub. 27 - 11/33

Authors : Alekseyev, A. Ye., Corr. Memb. Academy of Sci. Prof. of USSR, A. S. Yeremeyev, Eng., and R. A. Lyuter, Dr. of Tech. Sci.

Title : Problems of the domestic water-wheel generator design

Periodical : Elektrichestvo, 7, 55-65, J1 1955

Abstract : The tremendous development of hydroelectric power stations in the USSR creates the problem of designing more and more powerful water-wheel generators. This in turn places several technical problems to be solved by Soviet machine manufacturers and designers. Among these problems are: rationalized grouping of all the elements; static and dynamic stability under operation for long transmission lines; improvements in construction details, like that concerning the total height of the generators in relation to the rotation speed of the water wheel, etc. Eleven

AID P - 3024

Elektrichestvo, 7, 55-65, J1 1955

Card 2/2 Pub. 27 - 11/33

photographs, drawings and diagrams, 3 tables, 15
Soviet references (1945-1955) 1 American (1934).

Institution : Plant "Elektrosila" im. Kirov.

Submitted : Ap 13, 1955

ALVERDYANTS, L.M.; KLETSKIY, I.N.; KOSTENKO, M.P.; LYUTER, R.A.;
SAPOZHNIKOV, R.A.; CHAPLINSKIY, S.K.; CHEMERKIN, K.G.

I. V. Tokov; obituary. Elektrichestvo no.12:77 D '55. (MLRA 9:3;
(Tokov, Ivan Vasil'evich, 1901-1955)

VASHURA, B.F.; STUPEL', F.A.; SHTURMAN, G.I.; BERGER, A.Ya.; LYUTER,
R.A.; YEREMEYEV, A.S. |

Professor O.B. Bron. Elektrichestvo no.5:94 My '56. (MLRA 9:8)
(Bron, Osip Borisovich, 1896-)

IVANOV, N.P.; YEREMEYEV, A.S.; LYUTER, R.A.; KAPLAN, M.Ya.; IPATOV, P.M.

Powerful hydrogenerators. Elektrosila no.14:5-11 '56.
(MIRA 12:12)

(Hydroelectric power stations)

LYUTER, R.A.; MOZALEVSKIY, A.V.

Dynamolectric excitation system for hydrogenerators. Elektrosila
no.14:33-35 '56. (MIRA 12:12)
(Electric generators)

8(0)

SOV/112-59-1-698

Translation from: Referativnyy zhurnal. Elektrotehnika, 1959, Nr 1,
pp 92-93 (USSR)

AUTHOR: Lyuter, R. A., Samoylovich, N. Ya., and Koldobskiy, M. I.

TITLE: Thermal Durability of Squirrel-Cage-Rotor AC Electric Machinery

PERIODICAL: Elektrosila, Nr 15, 1957, pp 29-42

ABSTRACT: Heating of induction and synchronous motors is examined under these conditions: starting, undervoltage operation, cutting-off one phase of the synchronous motor, overload up to the limit of steady-state stability, and excitation loss. Temperature rise in $^{\circ}\text{C}$ of the starting rotor winding during the starting period is $\Theta_c = C; (1 - e^{-t_n/T_s})$, where w is the average value of losses during starting per unit surface of bars in w/cm^2 ; $C = 20-100$ degrees $\cdot \text{cm}^2/\text{w}$ is the heating constant of piece bars over the steel (it depends on the tightness of bar-steel contact), roughly $C \approx 50$; T_s is the time constant of bar heating for round copper bars; with $C = 50$, $T_s \approx 44 d_c$ per sec, where d_c is

Card 1/7

SOV/112-59-1-698

Thermal Durability of Squirrel-Cage-Rotor AC Electric Machinery

the bar diameter in cm; $t_n = \frac{T_m M_H}{M_n K_u}$ is the starting time in seconds.

(Translator's note: Apparently, the first formula is incorrectly typeset in the Russian original.) The quantity of heat evolved in the rotor over the starting period with the initial slip s of the rotating rotor is

$$Q_p = \frac{s^2}{2} T_m M_H \frac{1}{K_u} \quad \text{in kw. sec, where}$$

$$T_m = \frac{27.4 GD^2 (n_n / 100)^2}{M_H} \quad \text{is the mechanical time constant in sec;}$$

$\frac{1}{K_u} \approx \frac{1}{1 - M_c / M_n}$; M_H is the rated motor torque in synchronous kw; n_n is
 rated rpm;
 M_n and M_c are the starting torque and the resistance torque of the drive (in

Card 2/7

SOV/112-59-1-698

Thermal Durability of Squirrel-Cage-Rotor AC Electric Machinery

synchronous kw), both being functions of the slip s in the general case; GD^2 is the flywheel effect of all spinning masses in $\text{ton} \cdot \text{m}^2$. In simplified calculations, under the assumption of adiabatic heating, the temperature rise over the starting period of the rotor starting winding made from copper, brass, or bronze can be computed from the formula $\Theta = 1.28 \frac{t_n M_n}{G} k_k k_b$ in $^{\circ}\text{C}$ where G is the starting winding weight in kg; the coefficients $k_k = 0.80-0.90$ and $k_b = 1$ for a single-cage winding; $k_k k_b = 0.60-0.75$ for a double-cage motor whose upper cage weighs G . Assuming one hot starting and two cold startings with the rotor temperature rise of $\frac{\Theta_{\max}}{k_k k_b} = 250^{\circ}\text{C}$ for single-cage induction motors and 300°C for synchronous and double-cage induction motors, the maximum starting time permissible by rotor heating conditions will be $t_n \max = 195 \frac{G}{M_n}$ for single-cage induction motors and

Card 3/7

SOV/112-59-1-698

Thermal Durability of Squirrel-Cage-Rotor AC Electric Machinery

$t_{n \max} = 235 \frac{G}{M_n}$ for synchronous and double-cage induction motors. On the basis of stator heating conditions, assuming a temperature rise of 35-40°C per one starting for class-A insulation windings and of 50-55°C for class-B insulation windings, the permissible starting time in seconds will be

$t'_{n \max} = \frac{7,850}{j_{nM}^2}$ for class-A insulated windings and $t'_{n \max} = \frac{10,500}{j_{nM}^2}$ for

class-B insulated windings, where j_{nM} is the initial starting current density in amp/mm². Estimated values of permissible starting time are between 4 and 15 sec. In 3-kv synchronous and induction motors, the starting time is limited by rotor overheating, while in 6-kv induction motors, by stator overheating. With an undervoltage and motor operation within its stable range, the permissible time of operation with the voltage 1 - p as a fraction of the rated

Card 4/7

SOV/112-59-1-698

Thermal Durability of Squirrel-Cage-Rotor AC Electric Machinery

voltage is $t_p' = \frac{1.25}{I_p'^2 - 1} t_{1.5}$ in seconds, where $t_{1.5}$ is the standard

permitted 50%-current overload time (GOST 183-55 specifies 60 and 120 sec); the stator current in induction machines I_p' as a fraction of the rated current is determined, for undervoltage conditions, from the current diagram for the specified active power; in the synchronous machines the field current, as a fraction of the rated current, for undervoltage conditions, should be determined from the vector diagram for the field current. In case of a considerable

undervoltage, the deceleration time of the motor is $T' = T_m \frac{M_H}{M_C - M_n / (1 - p^2 cdk)}$.

Over the time required to attain the slip s the rotor-winding temperature rise

will be $\Theta_s' = 1.28 \frac{T' M_n (1 - p)^2 s^2}{G} k_k k_b$ in °C.

Card 5/7

SOV/112-59-1-698

Thermal Durability of Squirrel-Cage-Rotor AC Electric Machinery

The permissible speed drop, for undervoltage conditions, can be determined from this rule: over the deceleration time down to the slip s and over the subsequent speed-rise time on voltage recovery, the rotor-winding temperature rise should not exceed the specified value Θ_{\max} in $^{\circ}\text{C}$. Hence:

$$s = \sqrt{\frac{\Theta_{\max} G}{1.28 [T' M_n (1 - p)^2 + T_{In} M_n / k_u] k_k k_b}}.$$

When the motor is operating with one phase cutoff, its stator current is equal to the line-to-line voltage divided by the sum of positive-phase-sequence and negative-phase-sequence impedances. The time of one-phase-off operation is largely determined by heating the rotor with negative-phase-sequence currents

$I_2(b \text{ q/e})$. The quantity $A_2 = \int_0^t I_2^2 dt$, where t in seconds should not exceed

Card 6/7

SOV/112-59-1-698

Thermal Durability of Squirrel-Cage-Rotor AC Electric Machinery

120-150 for induction motors, about 60 for synchronous motors (except for 2-pole types), and about 30 for 2-pole synchronous motors. Permissible time of under-load operation of a synchronous motor on loss of field can be determined in a way similar to the undervoltage case, i. e., considering the value of stator or rotor current and the value of $t_{1.5}$.

Ye. Ya. K.

Card 7/7

AUTHORS: Kostenko, M.P., Alekseyev, A. Fe., 30W/105-58-7-30/32
Lyuter, R.A., Zavalishin, B. A.
Gnedin, L. P., Britsin, M. L.

TITLE: Leonid Nikolayevich Gruzov (Deceased)

PERIODICAL: Elektrichestvo, 1958, Nr 7, pp 93-95 (USSR)

ABSTRACT: Professor Leonid Nikolayevich Gruzov, Doctor of Technical Sciences, Engineer-Colonel, Head of the Kafedra elektropitaniya ustanovok svyazi Voennoy krasnoznamennoy akademii svyazi (Department of Electric Supply of Telecommunication Equipment at the Krasnoznamennaya Military Academy of Telecommunication) a prominent expert in the field of electric machines, died on October 17th, 1957, at the age of 51. He graduated with distinction from the Donskoy politekhnicheskoy institut (Don Polytechnical Institute) in 1927, was then aspirant at the Leningradskiy politekhnicheskoy institut (Leningrad Polytechnical Institute), assistant, and finally docent at the same institute. He combined his scientific and pedagogical activity with that of an engineer. He published a series of papers on the transient modes of operations of electric machines and of power supply systems.

Card 1/1

Leonid Nikolayevich Gruzov

SOV/105-58-7-30/52

He worked as engineer in the "Elektrosila" works as well. He took part in World War II. In 1947 he took his degree as Doctor of Technical Sciences. He developed a method for the investigation of electric machines. He was first head of the Department of Theoretical Electrical Engineering, then of the Department of Electric Supply Plants at the Military Academy of Telecommunication. He published more than 30 scientific papers, textbooks and manuals. There is 1 photograph.

1. Scientific personnel--USSR

Card 2/2

ZHERVE, Georgiy Konstantinovich; LYUTER, R.A., doktor tekhn.nauk,
retsensent; RIVLIN, L.B., inzh., red.; SOBOLEVA, Ye.M.,
tekhn.red.

[Industrial testing of electric machinery] Promyshlennye
ispytaniia elektricheskikh mashin. Izd.2., perer. Moskva,
Gos.energ.izd-vo, 1959. 504 p. (MIRA 13:2)
(Electric machinery--Testing)

ALEKSEYEV, A.Ye.; BASHARIN, A.V.; BOGORODITSKIY, N.P.; VASIL'YEV, D.V.;
IVANOV, V.I.; LYUTER, R.A.; MANOYLOV, V.Ye.; YERMOLIN, N.P.;
FRAMKE, A.V.

Vladimir Tikhonovich Kas'ianov; on the seventy-fifth anniversary
of his birth and the tenth anniversary of his death.
Elektrichestvo no.4:95 Ap '62. (MIRA 15:5)
(Kas'ianov, Vladimir Tikhonovich, 1887-1952)

IPATOV, P.M., kand.tekhn.nauk; KAZOVSKIY, Ye.Ya., doktor tekhn.nauk;
KULIKOV, N.V., inzh.; LYUTER, R.A., doktor tekhn.nauk

Research conducted at the Leningrad branch of the All-Union
Scientific Research Institute of Electromechanics and the S.M.
Kirov "Elektrosila" factory. Vest.elektrprom. 33 no.4:3-8
Ap '62. (MIRA 1964)
(Electric machinery)

KOSTENKO, M.P., akademik; LYUTER, R.A., doktor tekhn.nauk; KAZOVSKIY, Ye.Ye.,
doktor tekhn.nauk, prof.; IVANOV, N.P., kand. tekhn.nauk

Conditions governing the use of nonsynchronous cutting-15
in electric power systems. Elektrichestvo no.12:77-78 D 1965.
(MIRA 18:12)